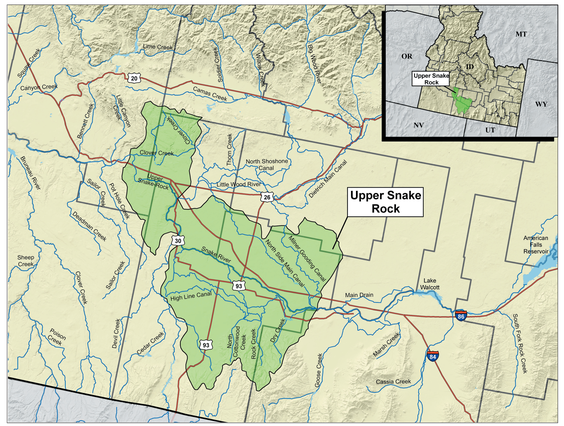
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

Upper Snake Rock Watershed, Idaho: 2004-2006

An NRCS* Special Emphasis Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Evaluate the effects of changing surface to overhead irrigation systems on water quality of return flows and the effects of conservation practices on sediment and phosphorus in irrigation return flows.

Watershed Description

- Receives approximately ten inches of precipitation per year.
- Nearly all water used by crops is delivered by irrigation systems, diverted from the Snake River.
- 1,537,000 acres
- 53% rangeland and 41% cropland
- A Total Maximum Daily Load (TMDL) has been established for sediment, pathogens, and phosphorus.

Issues: Irrigation return flows laden with sediment, nutrients, runoff from dairies and feedlots; effluent from aquaculture, industrial and municipal facilities; storm water runoff; water conservation; air quality; soil quality; and wildlife habitat.

*Natural Resources Conservation Service

Approach

Water sampling: Sediment, flow, nutrients (total and dissolved phosphorus)

Watershed models: MODFLOW, SWAT (Soil and Water Assessment Tool).

Water quality monitoring: Water flows, irrigation return flows

Communicating Results

Database development for monitoring irrigation return flows; identification of the effects of irrigation system conversion on irrigation return flow water quality; and identification of irrigation system placement effects.

Collaborators

- USDA, Natural Resources Conservation Service
- USDA, Agricultural Research Service
- Idaho Farm Service Agency
- Idaho Department of Environmental Quality
- University of Idaho
- Twin Falls Canal Company
- North Side Canal Company

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Wheel line irrigation.

Temperature measurement.

Installing a flume.

Timeline

2003
Initial funding

2004
August CEAP bibliographies

2005
May Wetlands peer review
July Wildlife literature review (program-based)
October Cropland literature reviews
Wildlife literature review (practice-based)
Wildlife Work Plan
November Wetlands Work Plan
December Draft findings—Prairie Pothole region

2006
February Preliminary habitat quality models—Prairie Potholes wetland region
March Preliminary National Assessment Report

2007
Fall National Assessment Final Report
Special Emphasis Watershed reports

www.nrcs.usda.gov/technical/nri/ceap/